

REMARKS

By this Amendment, claims 1, 3, 8, 12, 13 and 15 are amended to merely clarify the recited subject matter. Claims 1-16 are presently under consideration and claims 17-23 are presently withdrawn from consideration. Claims 1-23 are pending.

Claims 1, 4, 5, 10, 11 and 13-16 were rejected under 35 U.S.C. 102(a) as being anticipated by Goodman et al. (U.S. 6,887,339; hereafter “Goodman”) and claims 2, 3, and 6-9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Goodman in view of Mahoney et al. (U.S. 6,902,646; hereafter “Mahoney”). Applicant traverses the rejections because the cited prior art, analyzed individually or in combination, fails to disclose, teach or suggest the invention as recited in the rejected claims.

For example, the cited prior art fails to disclose, teach or suggest the claimed plasma processing system including a monitoring assembly comprising a harmonic multiplexer . . . wherein a first path in the harmonic multiplexer is used to provide RF power from a RF source to a plasma generating component in a plasma chamber. . . and wherein a second path in the harmonic multiplexer is used to monitor RF power reflected from the plasma chamber, the second path comprising a filter assembly configured to separate harmonic frequencies from a fundamental frequency, the filter assembly being coupled between the plasma generating assembly and the signal processor,” as recited in independent claim 1 and its dependent claims.

Similarly, the cited prior art fails to disclose, teach or suggest the claimed plasma processing system comprising a monitoring assembly comprising . . . a harmonic multiplexer disposed in energy-receiving communication with the system component, and wherein . . . the second path [of the harmonic multiplexer comprises] a filter assembly configured to separate harmonic frequencies from a fundamental frequency, the filter assembly being coupled between the plasma generating assembly and the signal processor,” as recited in independent claim 13 and its dependent claims, or the claimed monitoring assembly comprising “a harmonic multiplexer adapted to communicate energy to and from the plasma processing chamber. . . wherein . . . a second path in the harmonic multiplexer comprises a filter assembly connected to the signal processor and adapted to receive reflected energy from the plasma processing chamber and separate harmonic frequencies from a fundamental frequency,” as recited in independent claim 15 and its dependent claims.

Goodman merely discloses a direct RF power supply, that is, a closely-coupled plasma processing system in which the RF power supply is co-located in a single unit with

matching network components. The RF supply unit is located immediately adjacent to a load, e.g., an antenna or substrate holder, that delivers power to a plasma. Although some of Goodman's embodiments employ digital circuitry to optimize efficiency, and reduce spurious harmonic content, . Measurement and control of power and phase parameters in real time may support the control of plasma instabilities.

Mahoney fails to remedy the deficiencies of Goodman because Mahoney merely teaches use of an array of sensors to obtain diagnostic data, such as ion current flux and effective electron temperature, from multiple locations about the boundary of the plasma body.

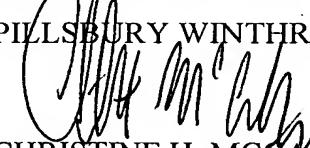
Accordingly, the combined teachings of Goodman and Mahoney fail to disclose, teach or suggest the claimed plasma processing system or monitoring assembly including a harmonic multiplexer wherein a second path in the harmonic multiplexer is used to monitor RF power reflected from the plasma chamber, the second path comprising a filter assembly configured to separate harmonic frequencies from a fundamental frequency, the filter assembly being coupled between the plasma generating assembly and the signal processor. Therefore, claims 1-16 are allowable.

All objections and rejections having been addressed, Applicant requests issuance of a notice of allowance indicating the allowability of the pending claims. However, if anything further is necessary to place the application in condition for allowance, Applicant requests that the Examiner telephone the undersigned Applicant representative at the number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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